REMARKS

Claims 1-9 are pending in this Application. Claims 1-12 were rejected by the Examiner. The Applicant has amended claims 1 and 7. All claim amendments and new claims are fully supported by the specification. No new matter has been added.

35 U.S.C. §103(a)

Claims 1 and 7

The Examiner rejected claims 1 and 7 under 35 U.S.C. §103(a) as being unpatentable over Messenger (U.S. Ref. No. 5,101,406).

In order to establish a *prima facie* case of obviousness, the Examiner must demonstrate there is a suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Furthermore, the prior art references must teach or suggest **all** of the claim features. The Examiner is not free to pick bits and pieces from the prior art and, with the hindsight benefit of the Applicant's disclosure, attempt to reconstruct the invention. Orthopedic Equipment Inc. v. U.S., 217 U.S.P.Q. 193, 199 (Fed. Cir. 1983).

Messenger at column 2, ln. 69 to column 3, ln. 6 (in the BRIEF SUMMARY OF THE INVENTION) states, "... [w]hen a statistically unacceptable transmission error rate is observed, the remote station may then change its current encoding algorithm to another. This may be done by stepping in a predetermined manner through the various encoding algorithms recognized by the system or by pseudorandom selection." Accordingly, Messenger only discloses changing the "current encoding algorithm" in view of an unacceptable transmission error rate.

Furthermore, in the DESCRIPTION OF THE PREFERRED EMBODIMENTS, changes in view of unacceptable transmission error rates is described differently. For instance at column 8, lns. 34-42 Messenger states,

"[a]ccordingly, the remote station may be appropriately programmed to change its current operating frequency in response to transmission errors. The changing of the operating frequency in response to transmission errors is preferably done in a pseudorandom manner to avoid the possibility that all remote system stations will be transmitting on a single frequency, such a condition enhancing the likelihood of conflicting transmissions." Accordingly, Messenger, describes changes in view of transmission error as changing the transmission frequency.

In Messenger, with particular reference to columns 8 and 9, it is disclosed that a short spreading code is used and if an unacceptable error rate is achieved, that a long spreading code (more robust) is used. However, it does not disclose, suggest, or teach switching as a result of a low number of errors to a less robust scheme.

Additionally, there is no disclosure, teaching, or suggestion in the Messenger reference of appending an error check sequence or retransmitting "original or selectively modified" packets. Nor does the Messenger reference disclose, teach or suggest "combining a received packet with a retransmitted original or selectively modified packet."

The Applicant's claimed invention as claimed in amended independent claim 1, on the other hand, recites:

> A method for adjusting data modulation at a subscriber unit, comprising:
> receiving data at a transmitter for transmission;

> formatting the received data into packets for transmission, each packet having a particular type of encoding/data modulation;
>
> appending the error check sequences;
>
> transmitting the packets;
>
> monitoring a return channel for receipt of an acknowledgment for each packet that that packet has been received;
>
> retransmitting an original or selectively modified packet at the transmitter, if an acknowledgment for that packet has not been received;
>
> collecting retransmission statistics; and
>
> adjusting each particular encoding/data modulation using the collected retransmission statistics; wherein if the collected retransmission statistics indicate a low number of retransmissions, a higher capacity encoding/data modulation scheme is selected as the particular encoding/data modulation and if the collected retransmission statistics indicate a high number of retransmissions, a lower capacity encoding/data modulation scheme is selected as the particular encoding/data modulation.

which is not disclosed, taught, or suggested in the Messenger reference. Accordingly, the Applicant's amended independent claim 1 is patentably distinct from Messenger.

The Applicant's amended independent claim 7 recites:

> A method for adjusting data modulation at a subscriber, comprising:
> formatting data into packets for transmission over a wireless air interface;
>
> receiving packets of data over said air interface, each packet having a particular encoding/data modulation;
>
> for each received packet, generating and transmitting a positive acknowledgment at the physical layer of said air interface when a received packet has an acceptable error rate;
>
> collecting retransmission statistics; wherein if the collected retransmission statistics indicate a low number of retransmissions, a higher capacity encoding/data modulation scheme is selected as the particular encoding/data modulation and if the collected retransmission statistics indicate a high number of retransmissions, a

lower capacity encoding/data modulation scheme is selected as the particular encoding/data modulation; and
combining a received packet with a retransmitted original or selectively modified packet.

which is not disclosed, taught, or suggested in the Messenger reference. Accordingly, the Applicant's amended independent claim 7 is patentably distinct from Messenger.

Claims 2, 6, and 9

The Examiner rejected claims 2, 6, and 9 under 35 U.S.C. §103(a) as being unpatentable over Messenger as applied to claims 1 and 7, and further in view of Sayeed et al. (U.S. Ref. No. 5,828,677).

Among other deficiencies in the Messenger reference, there is no teaching, suggestion, or motivation to append error check sequences, and retransmit an original or selectively modified packet. Nor is there any disclosure, teaching or suggestion to combine a retransmitted original or selectively modified packet with a received packet. Moreover, Sayeed fails to cure these deficiencies.

Accordingly, amended independent claims 1 and 7 are patentable over Messenger and Sayeed, whether taken alone or in combination with one another.

Claims 2 and 6 depend from the Applicant's patentable amended independent claim 1 and are therefore patentable for at least the same reasons as patentable independent claim 1.

Claim 9 depends from the Applicant's patentable amended independent claim 7 and is therefore patentable for at least the same reasons as patentable independent claim 7.

Claim 3

The Examiner rejected claim 3 as being unpatentable over Messenger in view of Sayeed as applied to claim 2, and further in view of Barton et al. (U.S. Ref. No. 6,449,246).

Once again, neither the Messenger nor Sayeed references, alone or in combination with one another, disclose, teach or suggest appending error check sequences, or retransmitting an original or selectively modified packet. Furthermore, Barton fails to cure these deficiencies.

Additionally, Barton is cited as disclosing "nulling subchannels". However, in a careful review of that reference, it only discloses "inserting nulled symbols into the subcarriers" at column 11, lines 34-38. Nulling symbols merely implies that the sub-carriers are present but contain no data. In the present invention, the sub-carriers are nulled to reduce interference to other subcarriers. Furthermore, Barton does not disclose the use of nulled symbols in context with adaptive modulation and, accordingly, it is not correctly combinable with Messenger and Sayeed. There is no motivation or suggestion in these references for such a combination.

Therefore, amended independent claim 1 is patentable over Messenger, Sayeed, and Barton, whether taken alone or in any combination with one another.

Claim 3 depends indirectly from patentable amended independent claim 1 and is therefore patentable for at least the same reasons as patentable amended independent claim 1.

Claim 4

The Examiner rejected claim 4 under 35 U.S.C. §103(a) as unpatentable over Messenger in view of Chow (U.S. Ref. No. 6,064,692).

Neither Messenger nor Chow disclose, teach, or suggest appending error check sequences, or retransmitting an original or selectively modified packet. Additionally, although Chow refers to using a frequency domain equalizer in the receiver, it does not disclose an SC-FDE air interface which refers to the transmission scheme. Furthermore, Chow does not disclose the use of frequency domain equalization in context with adaptive modulation and, accordingly, it is not correctly combinable with Messenger. There is no motivation or suggestion in these references for such a combination.

Accordingly, amended independent claim 1 is patentable over Messenger and Chow, whether taken alone or in combination with one another.

Since claim 4 depends from patentable amended independent claim 1, it is patentable for at least the same reasons as patentable amended independent claim 1.

Claims 5 and 8

The Examiner rejected claims 5 and 8 under 35 U.S.C. §103(a) as being unpatentable over Messenger as applied to claims 1 and 7, and further in view of Chen (U.S. Ref. No. 5,982,760).

Again, the Messenger reference does not disclose, teach, or suggest appending an error check sequence or retransmitting "original or selectively modified" packets. Nor does the Messenger reference disclose, teach or suggest "combining a received packet with a retransmitted original or selectively modified packet." Moreover, the Chen reference fails to cure these deficiencies.

Accordingly, amended independent claims 1 and 7 are patentable over Messenger and Chen, whether taken alone or in combination with one another.

Since claim 5 depends from patentable amended independent claim 1, it is patentable for at least the same reasons as patentable amended independent claim 1.

Likewise, since claim 8 depends from patentable amended independent claim 7, it is patentable for at least the same reasons as patentable amended independent claim 7.

Furthermore, although Chen discloses a fast feedback channel, it does not disclose using it for transmission of acknowledgements or negative acknowledgements. Chen describes the fast feedback channel as sending commands. Accordingly, Chen does not describe the use of that channel for acknowledgements or in context of the remainder of the claim.

Accordingly, claims 5 and 7 are patentable over Messenger and Chen, whether taken alone or in combination with one another, for this reason as well as their respective dependence from patentable amended independent claims 1 and 7.

Conclusion

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the Applicant's undersigned attorney by telephone at the Examiner's convenience.

In view of the foregoing remarks and amendments, the Applicant respectfully submits that the present application, including claims 1-9, is in condition for allowance and a notice to that effect is respectfully solicited.

Respectfully submitted,

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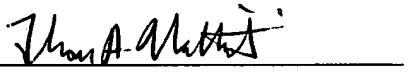
By 
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